

ABSTRACT OF THE DISCLOSURE

A controller for high torque, low RPM wind turbines and ocean current turbines.

The turbine consists of a large, input power shaft-mounted, rotating bull-gear with stationary powertrains mounted around its periphery. The gear teeth on the bull-gear rotate past the teeth on pinions, causing the pinions to turn and delivering power to each smaller powertrain. A controller regulates torque experienced by each powertrain to assure that torques are balanced between generators at any given system load. The regulating includes controlling local voltage at each generator in a powertrain by a transformer configured as a reactor, in which coils of the transformers are wired in parallel and are actively modulated with an SCR, solid-state, switching device. Each generator is connected to a respective primary coil of a transformer and a respective secondary coil is connected to an SCR.